VASIL'YEV, Yu. B.

5 (1,3)

SOV/20-126-1-24/62

AUTHORS: Kamneva, A. I., Ploshin, M. Ya., Yefimenkova, A. I., Vasil'yev, Yu. B., Muzychenko, L. A.

TITLE: Investigation of the Process of Electrochemical Condensation of the Mono-2-ethyl-hexyl-ester of Adipic Acid (Issledovaniye protsessa elektrokhimicheskoy kondensatsii mono-2-etilgeksilovogo efira adipinovoy kisloty)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 1, pp 90 - 92 (USSR)

ABSTRACT: The demand for high-molecular dicarboxylic acids and their esters rose. The process mentioned in the title is therefore theoretically as well as practically interesting. It proceeds on the anode in the case of the electrolysis of the monoester-salt-solution in the aqueous and nonaqueous electrolyte (Ref 1). The authors obtained in this investigation for the first time the sebacic acid-di-2-ethyl-hexyl-ester by electrosynthesis which is used as the main component of high-quality lubricants. Nonaqueous electrolytes are scarcely suitable for the mentioned purpose. The authors used therefore an aqueous electrolyte of the following composition: 300-400 g/l of the ester

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mentioned in the title, 30-50 g/l K_2CO_3 and 600-700 ml/water. Anode and cathode were of platinum. No diaphragm was used. Temperature 20-30°. The current density fluctuated at the anode between 10 and 60 a/dm^2. The yield of the main product: the sebacic acid-di-2-ethyl-hexyl-ester did not change with the current density. It amounted to 55% of the theoretical one. An intensive foam formation reduces the electrolyte considerably. This was eliminated by the isolating extraction with diethyl-ether. Finally the processes possible on the anode are discussed by means of the reactions (1) - (10). The hydrogen-superoxide theory of the electrosynthesis of Kolbe which was developed in most recent time by Glasstone (Ref 5) was in this case not confirmed (in line with Ref 6). Although the electrochemical condensation of the monoesters of dicarboxylic acids is to a certain extent similar to the electrosynthesis of Kolbe, the first mentioned one is a much more complicated process. The rules which govern the most simple case of an electrolysis of

Card 2/3

the monobasic carboxylic acids must therefore not hold in the case of the first mentioned process. There are 6 references, 1 of which is Soviet.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Institute of Chemical Technology imeni D. I. Mendeleyev)

PRESENTED: February 21, 1959, by A. N. Frumkin, Academician

SUBMITTED: February 17, 1959

Card 3/3

FIOSHIN, M.Ya.; VASIL'YEV, Yu.B.

Anode processes in the electrolysis of salts of carboxylic acids.
Dokl.AN SSSR 134 no.4:879-882 O '60. (MIRA 13:9)

1. Institut elektrokhimii Akademii nauk SSSR. Predstavleno akad.
A.N. Frumkinym.
(Electrolysis) (Salts)

YAO LU-AN' [Yao Lu-an]; VASIL'YEV, Yu.B., PAGOTSKIY, V.S.

Kinetics of electrochemical processes in the system quinone - hydroquinone. Part 1: Effect of specific adsorption of the reactant on the kinetics of reactions on a platinum electrode. Elektrokhimiia 1 no.2:170-175 F '65. (MIRA 18:6)

1. Institut elektrokhimii AN SSSR.

L 00916-66 EWT(m)/EWG(m)/EWP(j)/T/EWP(t)/EWP(b) IJP(c) DS/JD/JG/RM

ACCESSION NR: AP5020387 UR/0364/65/001/008/0968/0974
541.13

34
25
B

AUTHOR: Polyak, A. G.; Vasil'yev, Yu. B.; Bagotskiy, V. S. 55

TITLE: Oxidation of organic substances through a palladium membrane 55 27

SOURCE: Elektrokhimiya, v. 1, no. 8, 1965, 968-974

TOPIC TAGS: formic acid, formaldehyde, oxidation, electrochemistry, palladium

ABSTRACT: The diffusion of hydrogen (produced during chemisorption of formic acid and formaldehyde) through a palladium membrane was studied. It was found that the activity of the palladium membrane depends to a significant extent on its pretreatment. In this work the membrane was heated in an oxidizing bunsen burner flame, washed with 1:1 HCl and twice with distilled water. After pretreatment the membrane was tightly mounted between the ground surfaces of two different cells. When the cells on both sides of the membrane contained the same solution, the potential difference did not exceed 10 mv. Formic acid or formaldehyde was introduced into one of the cells and the potential shift was recorded on both sides of the membrane on two S1-19 oscillographs. It is believed that the membrane potentials on both sides

Card 1/4

are controlled by the equilibrium between the adsorbed hydrogen and hydrogen ions in the solution:

$$H_{abs} \rightleftarrows H_{ads} \rightleftarrows H^+ + e^-$$

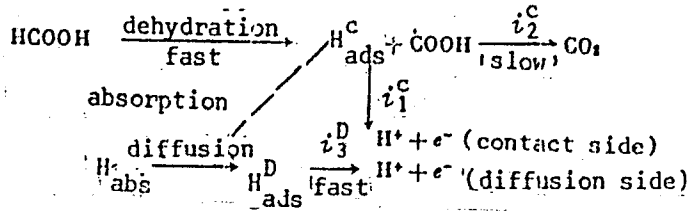
Electrooxidation of formic acid and formaldehyde through a palladium membrane was studied. On the diffusion side the membrane was anodically polarized by an electronic potentiostat, usually at $\phi_r = 0.6$ v. When there was no organic substance on the contact side of the membrane a weak cathode current was observed in the diffusion side of the cell. When the organic substance was introduced into the solution on the contact side of the cell an anode current began to flow through the diffusion side of the cell. When this solution was replaced again by 7N KOH or 1N H_2SO_4 without the organic substance, the diffusion current dropped to zero. This behavior was reproducible upon numerous trials (see fig. 1 of the Enclosure). The anode current in the diffusion part of the cell which occurs in the presence of organic substance in the contact part of the apparatus results only due to ionization of hydrogen which diffuses through the palladium membrane. It is shown that the occurrence of hydrogen on the diffusion side of the membrane is explained only by the dehydrogenation of formic acid during chemisorption on the membrane. It is shown that the oxidation current through the membrane is determined by the rate of formation of the

L 00916-66

ACCESSION NR: AP5020387

6

adsorbed hydrogen and competition of relatively fast ionization processes of the adsorbed hydrogen on the contact side, absorption by palladium and diffusion to the other side. The following general scheme is proposed:



"The authors express their gratitude to A. N. Frumkin for valuable discussion and I. A. Bagotskaya for consultation and help in the organization of this work." Orig. art. has: 6 figures.

ASSOCIATION: Institut elektrokhimii Akademii nauk SSSR (Institute of Electrochemistry, Academy of Sciences, SSSR)

SUBMITTED: 16Mar65 ENCL: 01 SUB CODE: OC, GC

NO REF SOV: 007 OTHER: 008

L 00916-66

ACCESSION NR: AP5020387

ENCLOSURE: 01

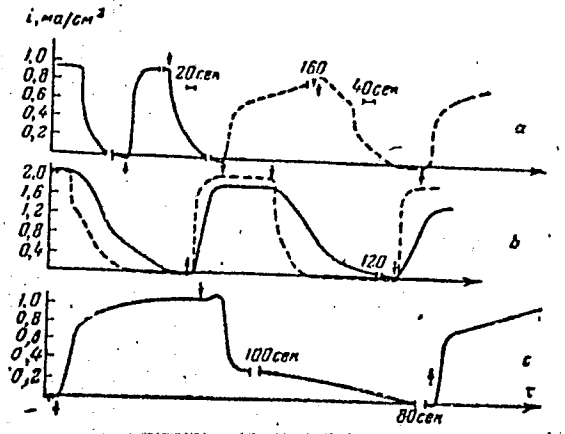


Fig. 1. Measurement of hydrogen ionization current at $\phi = 0.60$ v on the diffusion side of the membrane upon introduction (↑) and removal (↓) of formic acid (a, b) and formaldehyde (c) on the contact side of the cell.

a) 1--0.9 N H_2SO_4 1.8 *M* HCOOH | $\delta = 30$ μ
   2--2.5 N KOH + 3.4 *M* HCOOH
b) 0.1 N H_2SO_4 + 1.8 *M* HCOOH $\delta = 10$ μ
c) 5.4 N KOH + 3 *M* CH_2O $\delta = 100$ μ
   $\delta = 30$ μ

Card 4/4

BESKOROVAYNAYA, S.S.; VASIL'YEV, Yu.B.; BAGOTSKIY, V.S.

Kinetics of methanol adsorption on a platinum electrode.
Elektrokhimiia 1 no.9:1029-1035 S '65. (MIRA 18:10)

1. Institut elektrokhimii AN SSSR.

[illegible]

ACCESSION NR: [illegible] 0084 0089

AUTHOR: [illegible], Vasil'yev, [illegible] Bagotskiy, V. S.

TITLE: The adsorption of methanol at a smooth platinum electrode

SOURCE: Elektrokhimiya, v. 1, no. 1, 1965, 84-89

TOPIC TAGS: adsorption, methanol, platinum

ABSTRACT: The effect of the potential and concentration of the adsorption [illegible] methanol [illegible] platinum electrode was [illegible] [illegible] surface with methanol was studied [illegible] [illegible] [illegible] glass was [illegible] [illegible] was used. Preliminary cathode [illegible] produced good results. The relation of methanol adsorption to the potential [illegible] the platinum electrode takes the form of a curve with a maximum at [illegible] strong effect [illegible] methanol, the [illegible]

Card 1/2

L 48966-65
ACCESSION NR: AP5007750

point of zero charge, but by the location of the potential region in which the adsorption of hydrogen and oxygen is a minimum. Orig. art. has: 4 figures, 1 equation.

ASSOCIATION: Institut elektrokhimii Akademii nauk SSSR (Institute of Electrochemistry, Academy of Sciences SSSR)

SUBMITTED: [illegible] ENCL: 00 SUB CODE: GC, IC

NO REF SOV: [illegible] OTHER: [illegible]

Card 2/2

BESKOROVAYNAYA, S.S.; VASIL'YEV, Yu.B.; BAGOTSKIY, V.S.

Theory of the potentials of a platinum electrode in contact with organic substances. Elektrokhimiia 2 no.1:44-49 Ja '66. (MIRA 19:1)

1. Institut elektrokhimii AN SSSR, Moskva. Submitted February 9, 1965.

L 30217-66 EWP(j)/EWT(m)/ETC(f)/T JAJ/RM/DS/WE

ACC NR: AP6015009 (A) SOURCE CODE: UR/0364/66/002/005/0515/0521

55
54
B

AUTHOR: Veber, Yan; Vasil'yev, Yu. B.; Bagotskiy, V. S.

ORG: Polarographic Institute imeni J. Heyrovsky, Czechoslovak Academy of Sciences, Prague (Polyarograficheskiy institut Chekhoslovatskoy Akademii nauk); Institute of Electrochemistry, Academy of Sciences SSSR, Moscow (Institut elektrokhimii Akademii nauk SSSR)

TITLE: Electrooxidation of ethylene glycol on a platinum electrode. I. Adsorption of ethylene glycol from acid solutions

SOURCE: Elektrokhimiya, v. 2, no. 5, 1966, 515-521

TOPIC TAGS: ethylene glycol, adsorption, platinum, electrode, anodic oxidation, chemisorption, dehydrogenation

ABSTRACT: The kinetics of adsorption of ethylene glycol from a 1 N H_2SO_4 solution on the surface of a smooth platinum electrode were investigated. The adsorption was shown to be associated with a partial dehydrogenation of the adsorbed molecules. The process of chemisorption of ethylene glycol on a smooth platinum electrode is represented as follows:

$$HOCH_2CH_2OH + 10^{\bullet} \xrightarrow{v_{ads}} HO-C-C-OH + 4H.$$

UDC: 541.135.5-183 : 547

Card 1/2

L 30217-66

ACC NR: AP6015009

At temperatures above 70°C, the process of adsorption and dehydrogenation is described by the equation

$$HOCH_2CH_2OH \xrightarrow{v_{ads}} HO-\underset{\cdot\cdot\cdot}{C}+\underset{\cdot\cdot\cdot}{C}-\underset{\cdot}{O}H+4H$$

The adsorption rate is directly proportional to the volume concentration of ethylene glycol in the solution and decreases exponentially with increasing coverage (θ) of the electrode surface. Under stationary conditions, when $0.1<\theta<0.9$, the adsorption of ethylene glycol obeys a logarithmic isotherm. It is concluded that the absorption behavior of ethylene glycol is similar to that of methanol. Orig. art. has: 7 figures, 8 formulas.

SUB CODE: 07/ SUBM DATE: 02Jun65/ ORIG REF: 010/ OTH REF: 017

Card 2/2 CC

L 30218-66 EWP(j)/EWT(m)/ETC(f)/T JAJ/RM/DS/WE

ACC NR: AP6015010 (A) SOURCE CODE: UR/0364/66/002/005/0522/0528

60
58
B

AUTHOR: Veber, Yan.; Vasil'yev, Yu. B.; Bagotskiy, V. S.

ORG: Polarographic Institute imeni J. Heyrovsky, Czechoslovak Academy of Sciences, Prague (Polyarograficheskiy institut Chekhoslovatskoy Akademii nauk); Institute of Electrochemistry, Academy of Sciences SSSR, Moscow (Institut elektrokhimii Akademii nauk SSSR)

TITLE: Electrooxidation of ethylene glycol on a platinum electrode. II. Effect of electrode potential on the adsorption of ethylene glycol

SOURCE: Elektrokhimiya, v. 2, no. 5, 1966, 522-528

TOPIC TAGS: ethylene glycol, adsorption, platinum, electrode, anodic oxidation, hydrogenation, dehydrogenation

ABSTRACT: The effect of the potential of a smooth platinum electrode on the kinetics of adsorption of ethylene glycol from 1 N H_2SO_4 solutions was studied. The dependence of the steady-state coverage of the electrode surface by adsorbed particles on the potential is represented by a curve with a maximum lying at potentials of 0.4-0.5 v, i. e., in the region of potentials where the adsorption of hydrogen and oxygen is minimal. Measurements at various temperatures showed that the activation energy of adsorption increases linearly with the coverage of the electrode surface by the adsorbed particles. It is shown that at ϕ_r<0.7 v, the rate of the adsorption process involv-

UDC: 541.138 : 541.135.8-183 : 547

Card 1/2

ing hydrogenation is much higher than the rate of electrooxidation under steady-state conditions. The unsteady current during the electrooxidation of ethylene glycol is the ionization current of the adsorbed hydrogen formed during adsorption and dehydrogenation of the ethylene glycol molecule. Since the ionization rate of the adsorbed hydrogen is high, the magnitude of the unsteady current is determined by the rate of appearance of hydrogen, i. e., the rate of adsorption and dehydrogenation of ethylene glycol. The decrease of unsteady current with time is due to a drop of the adsorption rate as the coverage of the inhomogeneous surface of the platinum electrode increases. The authors thank A. N. Frumkin for his constant attention to this work and his helpful discussion of the results. Orig. art. has: 8 figures, 12 formulas.

SUB CODE: 07/ SUBM DATE: 02Jun65/ ORIG REF: 009/ OTH REF: 005

L 38162-66 EWT(m)/EWP(j)/T DS/JW/RM

ACC NR: AP6019235 (A) SOURCE CODE: UR/0364/66/002/003/0267/0276

AUTHOR: Khazova, O. A.; Vasil'yev, Yu. B.; Bagotskiy, V. S.

ORG: Institute of Electrochemistry, Academy of Sciences, SSSR, Moscow (Institut elektrokhimii Akademii nauk SSSR)

TITLE: The mechanism of electrolytic oxidation of methanol on a smooth platinum electrode

SOURCE: Elektrokhimiya, v. 2, no. 3, 1966, 267-276

TOPIC TAGS: electrochemistry, oxidation, polarization, methanol, platinum, electrode, acid solution, kinetics, chemisorption

ABSTRACT: The chemisorption and electrolytic oxidation of methanol were studied by steady state polarization experiments, in solutions of 1 N H_2SO_4 with methanol concentrations ranging from 10^{-3} to 5 M. At low potentials (relative to a hydrogen electrode), the polarization curves for smooth platinum electrodes obeyed the Tafel equation with slopes of 0.110-0.125. Above 0.65 v, deviations occurred because of the increase in the speed of adsorption and dehydrogenation of methanol over the steady state speed of electrooxidation. The speed of adsorption is given by $i = k \cdot c^{\beta}$, where c - volume concentration of methanol and $\beta \approx 0.5$; above c - 1 M, i reached a maximum. The speed of electrooxidation depended on θ - the degree of surface coverage of the

UDC: 541.13

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electrode by organic particles, and for constant potentials φ

$$i = ke^{\beta f\theta},$$

where f - inhomogeneity factor for the surface and β = 4.2-4.6 for all φ. Intrinsic polarization curves (constant θ) are described by:

$$i = k \exp\left\{\frac{\beta' F}{RT}\varphi_r\right\},$$

where β' = 0.6-0.8. The pH did not affect the speed of electrooxidation where both θ and φ were constant, except above pH = 12 where methanol dissociated. Electrochemical mechanisms were presented to explain the data for all ranges of φ and θ. Chemisorption proceeded by the decomposition of C-H (methanol) and the formation of C-Pt (electrode) and H-Pt. At low values of φ, the kinetics of oxidation were related to low surface coverage by OH particles, formed by $H_2O \rightleftarrows OH_{ads} + H^+ + e^-$ or $OH^- \rightleftarrows OH_{ads} + e^-$. For average values of θ and higher φ the following mechanism was applicable:

$$\underset{xxx}{C}-OH + OH_{ads} \rightarrow \underset{xx}{C}=O + H_2O;$$

where $\underset{xxx}{C}$ corresponded to 3 adsorbed C atoms. Orig. art. has: 5 figures, 16 formulas.

SUB CODE: 07/ SUBM DATE: 02Jun65/ ORIG REF: 017/ OTH REF: 021

Card 2/2 mlp

L 33348-66 EWT(1) GD

ACC NR: AT6005904 SOURCE CODE: UR/0000/65/000/000/0162/0175

AUTHOR: Vasil'yev, Yu. K.; Prokof'yev, Yu. A.; Vaynberger, G. Ya.

ORG: None

TITLE: Active-rotor step motors

SOURCE: International Federation of Automatic Control. International Congress. 2d, Basel, 1963. Tekhnicheskiye sredstva avtomatiki (Technical means of automation); trudy kongressa. Moscow, Izd-vo Nauka, 1965, 162-175

TOPIC TAGS: electric motor, step motor, motor design

ABSTRACT: This article examines two-rotor and two-stator step motors with axial distribution of sections (phases). These motors have fundamental advantages over motors with radial distribution of sections, including a smaller inertial moment and more divisions in the stator with an identical step cycle and, consequently, better utilization of the material of the machine. Approximate methods for the calculation of the static and frequency characteristics are investigated. These methods make it possible to determine the basic parameters of machine design. A calculation is performed to determine the minimum interval between the sequence of control pulses. The two-rotor step motor discussed is registered under Author's Certificate No. 131811, June 10 1959, by Yu. K. Vasil'yev. In order to determine the nature of the variation of flux as a function of the position of the rotor and the possibility of a more accurate calcula-

Card 1/2

L 33348-66
ACC NR: AT6005904

tion of the magnetic circuit, a magnetic field in a gap was simulated on the EGDA integrator by Engineer Yu. I. Rybal'chenko. Orig. art. has: 1 table, 13 figures, and 11 formulas.

SUB CODE: 09 / SUBM DATE: 23Jul65 / ORIG REF: 006 / OTH REF: 001

Card 2/2 JS

L 35840-66 EWT(1)

ACC NR: AP6015344 SOURCE CODE: UR/0119/66/000/005/0024/0026

AUTHOR: Vaynberger, G. Ya. (Engineer); Vasil'yev, Yu. K. (Candidate of technical sciences); Karpenko, B. K. (Candidate of technical sciences); Kabkov, G. Ya. (Engineer); Larchenko, V. I. (Engineer); Rybal'chenko, Yu. I. (Engineer)

ORG: none

TITLE: Stepping motors

SOURCE: Priborostroyeniye, no. 5, 1966, 24-26

TOPIC TAGS: stepping motor, micromotor, servomotor / RShD gear stepping servomotor, EShD stepping servomotor

ABSTRACT: A very brief description is supplied of (1) RShD reactive-rotor gear stepping motor intended for smaller steps and higher speeds and (2) EShD

Card 1/2 UDC: 621.313.13 - 133.4

L 35840-66

ACC NR: AP6015344 O

permanent-magnet-rotor two-stator stepping motor intended for larger steps, higher torques, and quick response. They were developed in the Kiev Institute of Automatics. An RShD-10-FD-IV motor is intended for operation at a fixed frequency of 100 ± 2 cps; it is equipped with an electromagnetic detent and a damper. Technical characteristics of eight RShD and five EShD types are tabulated. The RShD types have: maximum static torque, 140—4500 g·cm; maximum operating speed, 100—3500 steps per sec; power consumption, 13—300 w. The EShD types have: maximum static torque, 1000—18000 g·cm; maximum operating speed, 500—1600 steps per sec; power consumption, 250—1000 w. Orig. art. has: 3 figures, 2 formulas, and 1 table.

SUB CODE: 09 / SUBM DATE: none / ORIG REF: 004

ns

Card 2/2

BAGOTSKIY, V.S., prof., doktor tekhn. nauk, otv. red.; VASIL'YEV, Yu.B., kand. khim. nauk, otv. red.; YASNEBOV, V.V., red.

[Fuel cells; some theoretical problems] Toplivnye elementy; nekotorye voprosy teorii. Moskva, Nauka, 1964. 139 p. (MIRA 17:9)

1. Soveshchaniye po toplivnym elementam. 2d, Moscow, 1962.

GAVRILENKO, Yu.P.; CHEREDNICHENKO, Yu.N.; ULIZ'KO, I.S.; Prinimali uchastiye: FAL'KEVICH, E.S.; YEGOROV, A.V.; NEKHOTSA, V.A.; REVEKKO, L.Ya.; VASIL'YEV, Yu.B.; MAKSIMOV, V.M.; RAYTSIN, M.A.

Obtaining intricate, thin-walled titanium parts by casting in shell molds. Titan i ego splavy no.9:270-273 '63. (MIRA 16:9)
(Titanium founding)
(Shell molding (Founding))

VASIL'YEV, Yu.F. (Leningrad)

Device for a distance-type electrothermometer permitting measurement of the temperature of the water surface layer from on board a moving ship. Meteor. i gidrol. no.3:51-53 Mr '64. (MIRA 17:3)

29576
S/049/61/000/005/009/013
D201/D306

24,1800 (1063,1144)
9,6180 (1137)

AUTHORS: Ivakin, B.N., and Vasiliyev, Yu. F.

TITLE: Capacitive receivers of ultrasonic pulses

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya, no. 5, 1961, 725-729

TEXT: The authors describe and give the results of experimental investigations into the performance of a receiver designed to find a wider band registration of ultrasonic oscillation.The receiver, based on the effect of capacitance changes as a function of the change in spacing of two parallel plates, was suggested by B. N. Ivakin and designed at the Laboratoriya modelirovaniya instituta fiziki zemli AN SSSR (Laboratory of Simulation of the Institute of Physics of the Earth, AS USSR). Fundamentally the receiver consists of a steel rod as the measuring electrode of the capacitor, there being a layer of dielectric between the rod and the vibrating source. The acoustic theory of the device by B.N. Ivakin (Ref. 5: Tr. Geofiz. in-ta AN SSSR, no. 39, 1958). Using Equations (158)

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Capacitive receivers of ...

from this work modified to suit the given conditions (the dielectric layer is much thinner than the wavelength), the amplitude δ_u and the phase characteristic β_u of displacement u_{x_1} and u_{x_2} of the electrode capacitor planes are given by

$$\delta_u = \frac{u_{x_1} - u_{x_2}}{u_{x_1}} = \frac{\sqrt{1 + n_{12}^2 \sin^2 af} - 1}{\sqrt{1 + n_{12}^2 \sin^2 af}} \qquad (1)$$

$$\beta_u = \operatorname{arctg} (n_{12} \operatorname{tg} af) \qquad (2)$$

Card 2/6

where $n_{12} = W_1/W_2$ - the ratio of acoustic characteristic impedances of the steel rod and of the dielectric f - frequency, $a=2\pi\frac{l_o}{c_2}$, l_o being the thickness of dielectric and c_2 - the velocity of sound propagation in it. The quantity δ_u may be called the displacement utilization factor since it is actually the measure of transformation of displacements into the relative displacement of the capacitor electrodes. The amplitude and frequency response evaluated from (1) and (2) for the air and capacitor paper gap show the wide frequency band properties of the probe. The registration of the capacitance change is achieved either by amplification of the varying voltage across the condenser (constant charge applied) or by using the capacitance change for changing the frequency of a HF generator. In the first case (LF registration method) the variable capacitor constitutes the input of a cathode follower. Using a 6C1Π (6S1P) triode, the d.c. voltage is applied to the variable condenser at the input through the resistor R_H

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Capacitive receivers of ...

connected to the HT rail. For undisturbed registration of electrode displacements the required condition is that the time constant $R_H C_{dis} = \tau$ is much greater than the period of registered oscillations. The sensitivity of this amplifier is proportional to δ_u and to the d.c. voltage V, across the variable capacitor and inversely proportional to the spacing between the electrodes l_o. To determine the greatest sensitivity various acoustic materials were tested for filling it besides air: condenser paper, impregnated cloth, cellophane, nylon, rubber, glue films (БФ-2, ГЭН-150,88 (BF-2, GEN-150, 88)). The gap was made as small as possible: i.e. l_o = 5 - 50 microns. The best sensitivity was obtained with the condenser paper. The gap with a thin coating of rubber (5 - 10 microns) provided most sensitivity, but made the instrument unstable in operation. When comparing the registered waveforms with those obtained with the same conditions by the wide-band barium-titanate receiver as designed by L. N. Rykunov, it was seen that the latter was actually differentiating the registered pulse and

Capacitive receivers of ...

might be considered primarily as a pressure transcender, while the capacitive receiver produces a non-differentiated pulse and is a true displacement transcender. In an attempt to determine approximately the absolute displacement measurements, the capacitive receiver was compared with a Seignette's salt receiver having a sensitivity of 0.5 microvolt/bar and the results obtained can be assumed to be in good enough agreement. In the HF variant of the capacitive receiver, the capacitive probe was used as the tuning capacitor in a Clapp oscillator in a circuit described by H. M. Sharat (Ref. 7: Noncontacting gage for microdisplacement. Electronics, 27, no. 6, 1954). Although the results obtained show that the device is much more sensitive in this arrangement, its applications are limited because of the complicated circuitry involved. There are 5 figures and 7 references: 4 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: J. E. Evans, C. F. Hadley, J. D. Eisler, D. Silverman. A three-dimensional seismic wave model with both electrical and visual observation of waves. Geophys., 19, no. 2, 1954 (RZh Fiz., ref. no. 8232, no. 4, 1955); H. M. Sharat. Noncontacting

Card 5/6

29576
S/049/61/000/005/009/013
D201/D306

Capacitive receivers of ...

gage for microdisplacement. Electronics, 27, no. 6, 1954.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki zemli (Academy of Sciences USSR, Institute of Physics of the Earth)

SUBMITTED: September 13, 1960

Card 6/6

IVAKIN, B.N.; VASIL'YEV, Yu.F.

Wave properties of perforated materials for seismic modeling.
Izv. AN SSSR. Ser.geofiz. no.2:248-260 F '63. (MIRA 16:3)

1. Institut fiziki Zemli AN SSSR.
(Seismic waves)

82702

S/049/60/000/004/006/018
E073/E535

3.5000

AUTHORS: Vasil'yev, Yu.F. and Popov, S.M.

TITLE: Temperature Field in the Neighbourhood of Sharp Contoured Headlands (Based on Model Tests)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1960, No.4, pp.557-565

TEXT: It has been known for a long time that storms intensify when they hit peninsulas or even individual headlands which project into the sea. Even relatively small headlands have this property. The role of sharp contoured configurations of a coastline have been elucidated by V. V. Shuleykin (Ref.1), who showed that, particularly in the case of winter temperature contrasts between the conditions of the atmosphere above the sea and above the mainland (or over a large island), the coastline is almost accurately contoured by the isotherm passing along it, even if the contour if very complicated. This results in strongly nonuniform temperature and pressure fields, formation of increased temperature and pressure gradients against the headlands and reduced gradients in the region of the curved coastline. A more accurate theoretical

Card 1/5

Temperature Field in the Neighbourhood of Sharp Contoured Headlands (Based on Model Tests)

solution of this problem was published by Sekerzh-Zen'kovich (Ref.2); his work confirmed the correctness of the basic assumptions of the author of this paper and enabled calculation of the slight correction factors in particular cases of temperature-baric fields. Analytical solutions are inapplicable to complicated contours, whilst electrical analogues do not allow taking into consideration additional terms of the field equation, which in accordance with the theory is applicable to elliptically and parabolically curved coastlines. It is, therefore, convenient to investigate the temperature field against sharp headlands by means of thermal analogues. Approximate analogues proved useful for the analysis of the phenomena which form the field: a) the active layer is considered as a film which is heated by the surface of the sea; b) this film conducts heat in all horizontal directions and is isotropic in this direction; c) the film will radiate into the neighbouring space the more heat the larger the difference between its temperature and the temperature which would exist in absence of

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S/049/60/000/004/006/018
E073/E535

Temperature Field in the Neighbourhood of Sharp Contoured Headlands (Based on Model Tests)

heating by the sea. The calculations, carried out by V.V.Shuleykin ten years ago, have now been confirmed on the distribution of the average monthly air temperatures along a meridian, which would occur in absence of the influence of oceans. For conditions pertaining in the Central Antarctic, he obtained an average monthly temperature during the coldest winter months of -77°C and this corresponds with direct measurements carried out recently in the Antarctic. In this article experiments are described which were carried out by the authors on the propagation and loss of heat by means of proved test-rigs. The thermal analogues were realised by means of three heating systems which can also be used with advantage in other work. The experiments were carried out with a model of the Black Sea of the scale 1: 3×10^6. As a heat conducting and heat radiating film, an 0.5 mm thick copper sheet was used. Simple calculations showed that this satisfied approximately the requirements of analogy with the natural conditions. Inside the configuration of the "Sea" the heating of the sheet was effected as a result of chemical reactions. Fig.1 shows a sketch

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of the layout of the equipment for simulating the temperature field in the neighbourhood of sharp headlands of the Black Sea. The sketch, Fig.2, shows the measured results of the temperature fields obtained in the analogue of the Black Sea. It can be seen that the isolines become much denser against sharp contoured headlands and that there is an appreciable stretching of the isolines in the neighbourhood of concave sections of the coastlines, fully in correspondence with the theory of V. V. Shuleykin. Experiments were also carried out on models of the Mediterranean. Fig.3 shows a sketch of the equipment used for simulating the temperature fields against sharp protrusions into the Mediterranean. Fig.5 shows the results of measurements of the temperature field in the Mediterranean obtained in model tests and it is stated that these are in satisfactory agreement with naturally measured results. The number of winter storms with intensities exceeding 8 balls are nineteen times more frequent in the region of Sicily than in any other spot of the Mediterranean. This is easily explained on the

Temperature Field in the Neighbourhood of Sharp Contoured Headlands (Based on Model Tests)

basis of the theory of monsoon circulations. The authors also made comparative measurements of the temperatures along the coastline (Fig.6). Data obtained by Shuleykin in the Aegean Sea during his expedition on the "Sedov" in December, 1957 showed that the theoretically derived formula on the relation between pressure and temperature:

$$d\tau = -\frac{1}{\Pi} dp, \qquad (10)$$

where $\Pi = 1.6$ for the pressure expressed in millibars, is in good agreement with measured results. The obtained results lead to the conclusion that in the neighbourhood of peninsulas and headlands jutting into the sea there is a sharp increase in the monsoon fields on both sides leading to an increase in the temperature and thus in the baric gradients and an intensification of the winds caused by these gradients, which in turn leads to an intensification of the storms. There are 7 figures and 5 Soviet references.

SUBMITTED: April 3, 1959

VASIL'YEV, Yu.F.

Resistance theromometers for a single cable. Prikl.geofiz.no.13 116-130 '55. (MLRA 8:10)
(Earth temperature) (Thermometers)

IVAKIN, B.N.; VASIL'YEV, Yu.F.

Capacitance receivers of ultrasonic impulses. Izv.AN SSSR.Ser. geofiz. no.5:725-729 My '61. (MIRA 14:4)

1. Akademiya nauk SSSR, Institut fiziki Zemli.
(Ultrasonic waves) (Seismological research)

L 47138-66 EWT(1) GD/GW

ACC NR: AT6031368 SOURCE CODE: UR/0000/66/000/000/0034/0041

AUTHOR: Vasil'yev, Yu. F.; Gil'bershteyn, P. G.; Gurvich, I. I.; Ivakin, B. N.

ORG: none

TITLE: Perforated materials for two-dimensional seismic modeling

SOURCE: AN SSSR. Institut fiziki Zemli. Geoakustika; ispol'zovaniye zvuka i ul'trazvuka v seysmologii, seysmorazvedke i gornom dele (Geoacoustics; the use of sound and ultrasound in seismology, seismic prospecting, and mining). Moscow, Izd-vo Nauka, 1966, 34-41

TOPIC TAGS: seismic modeling, perforated material, seismic wave, ~~model~~, elastic wave, ~~propagation~~ wave propagation

ABSTRACT: A description is given of the use of perforated materials for controlling density and elasticity in ultrasonic seismic-wave modeling experiments conducted in the Institute of Physics of the Earth of the Academy of Sciences USSR and the Moscow Geological Prospecting Institute. Parametric measurements were made on two-dimensional sheets of duralum, brass, iron, and plexiglass containing perforations (d = 1—10 mm) arranged in triangular, hexagonal, and rectangular grids. The ratio of the dominant wavelength to the distance (which ranged from 2.5 to 20 mm) between the perforations varied from 4 to 50 depending upon the type of sheet and the nature of the experiment. Experiments were conducted to establish: 1) the possibility of recording regular

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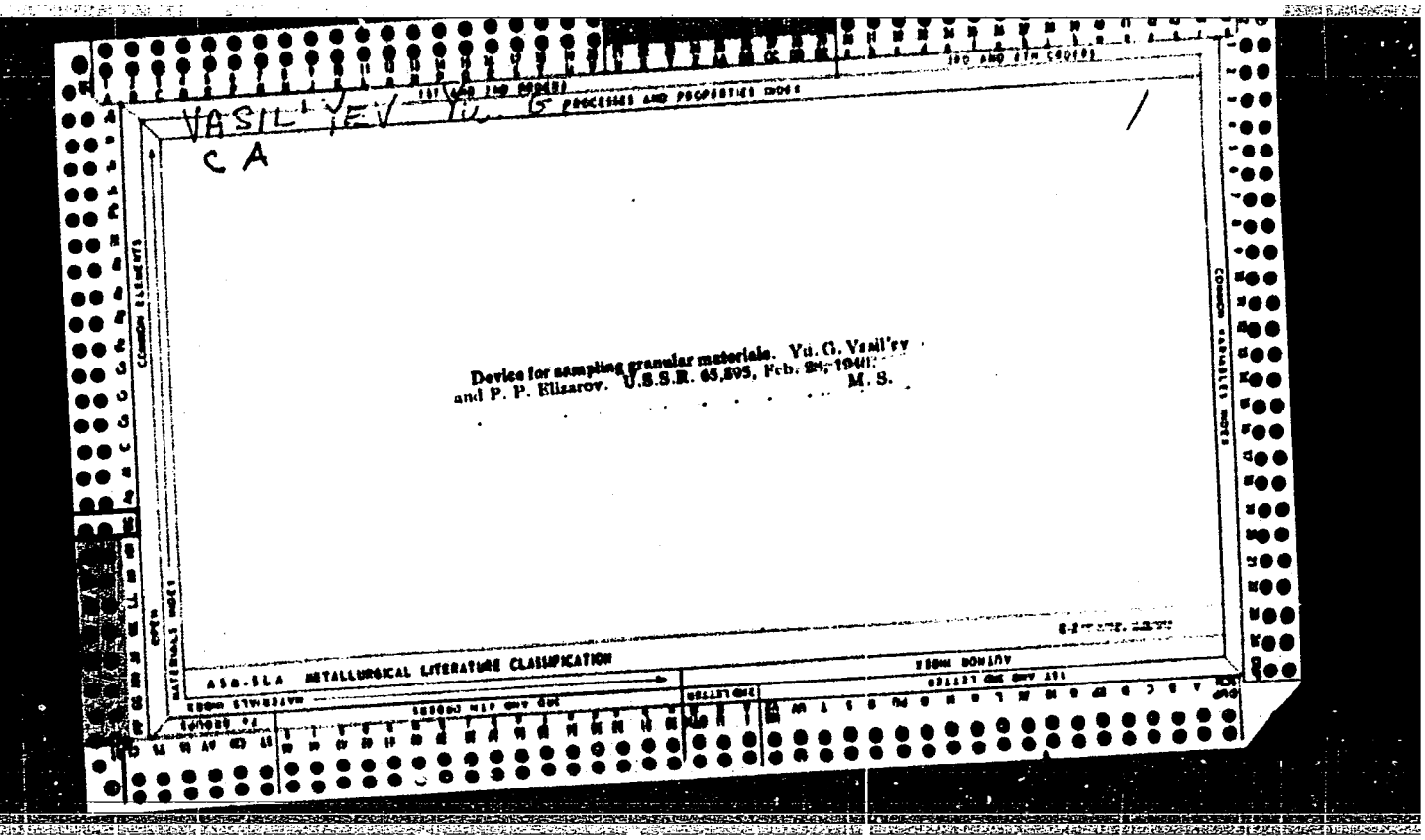
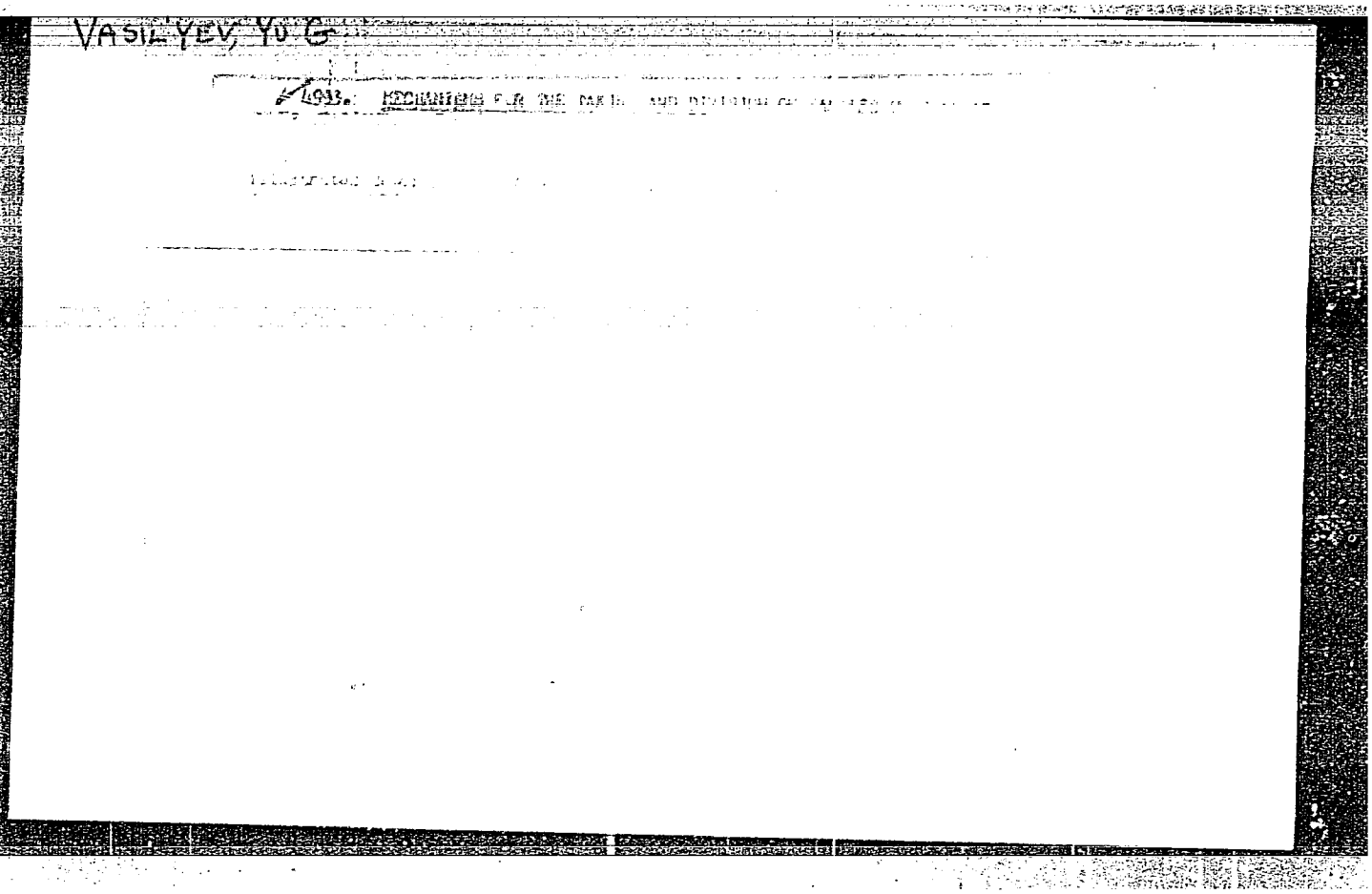
longitudinal and shear waves, 2) the relationship between the effective elastic-wave propagation velocities and the size, number, and shape of the perforations, 3) the dispersion velocities, 4) the absorption of the elastic-wave energy, and 5) the possible appearance of velocity anisotropy and absorption in sheets with different perforation patterns. The results of experiments showed that under certain conditions regular longitudinal, shear, and surface waves arise in perforated materials and propagate with characteristic velocities almost without dispersion or attenuation as determined by the coefficient of effective absorption. Thus, perforated materials under specific conditions behave like a macrohomogeneous, nonideal, elastic medium to which can be imparted isotropic, anisotropic, or smoothly changing properties. The applicability of these materials in seismic modeling is determined by the appropriateness of the elastic, density, and absorbing properties of the rock to the analogous parameters, which can be controlled in perforated sheets by changing the perforation pattern. The accuracy of reproducing properties in these models is very high, reaching 1—2% in the case of velocity. Orig. art. has: 4 figures. [DM]

SUB CODE: 08/ SUBM DATE: 28Mar66/ ORIG REF: 007/ ATD PRESS: 5088

Card 2/2 afs





IVANOVA, T.G.; VASIL'YEV, Yu.I.

Selecting the optimum characteristics of apparatus in recording the head waves emanating from the crystalline basement. Izv. AN SSSR. Ser. geofiz. no.5:636-653 My '64. (MIRA 17:6)

1. Institut fiziki Zemli AN SSSR.

AYVAZ'YAN, V.G., prof.; VELIKANOV, A.L., kand. tekhn. nauk; KOROBOVA, D.N., mlad. nauchn. sotr.; FEL'DMAN, M.P., doktor tekhn. nauk; VASIL'YEV, Yu.F., red.

[Selection of power parameters and structural dimensions of hydroelectric power stations] Vybor energeticheskikh parametrov i razmerov sooruzhenii gidroelektrostantsii. Moskva, Nauka, 1965. 135 p. (MIRA 18:4)

1. Moscow. Energeticheskiy institut.

VASIL'YEV, Yu. I.

Cand Phys-Math Sci - (diss) "Study of seismic exchange waves." Moscow, 1961. 12 pp; (Academy of Sciences USSR, Inst of Earth Physics imeni O. Yu. Shmidt); 200 copies; price not given; (KL, 6-61 sup, 192)

VASIL'YEV, YU. I. PA 187T26

USSR/Geophysics - Seismology Jul/Aug 51

"Determining the Absorption Coefficient of Seismic Waves," Yu. I. Vasil'yev, Geophys Inst, Acad Sci USSR

"Iz Ak Nauk SSSR, Ser Geofiz" No 4, pp 31-42

Data on propagation and amplitude of seismic waves contribute to study of structure of terrestrial layers. Suggested methods of detn of absorption coeff of direct and refracted waves are useful for analysis of exptl data. Submitted 30 Mar 51.

187T26

VASIL'YEV, Yu.I.

FD-762

USSR/Geophysics - Conference

Card 1/1 : Pub 44-10/11

Author : Kirillov, F.

Title : Chronicles. Conference of young scientists of the Geophysics Institute, Academy of Scientists of the USSR

Periodical : Izv. AN SSSR, Ser. geofiz., 495-496, Sep-Oct 1954

Abstract : May 17-20, 1954, the Geophysics Institute held a conference at which junior scientific workers participated with 18 reports; e.g. Ye. A. Lyubimova (heating of the Earth), S. L. Solov'yev (intensity of earthquakes in Turkmenia 1912-1951), S. A. Fedotov (wave hodographs), Yu. I. Vasil'yev (use of amplitude data in seismic prospecting), O. G. Shamina (elastic impulses during collapse of rocks in earthquakes), O. I. Silayeva (velocity of propagation of elastic waves in granite, marble, etc.), V. I. Tatarskiy (propagation of waves in medium with random weak inhomogeneity of refraction coefficient), L. P. Zaytsev (reflection of waves from boundary), A. S. Chaplygina (measuring the thermobaric field in the atmosphere by statistical treatment of empiric data).

Institution : --

Submitted : --

VASIL'YEV, Yu. I.

49-3-3/16

AUTHOR: Vasil'yev, Yu. I.

TITLE: Study of the interchange refracted waves (composite refractions) in seismic prospecting. (Izucheniye obmennykh prelomlennykh voln pri seysmicheskoy razvedke).

PERIODICAL: "Izvestiya Akdemii Nauk, Seriya Geofizicheskaya" (Bulletin of the Ac.Sc., Geophysics Series, 1957, No.3, pp.301-318 (U.S.S.R.)

ABSTRACT: In investigations carried out in 1951 by the Geophysics Institute, Ac.Sc. U.S.S.R. (Geofizicheskiy Institut AN SSSR) under the leadership of Gamburtsev, G. A. it was shown that it is possible to record composite refracted waves of the types $P_{12}S_1$, $P_{123}S_{21}$, $P_{1232}S_1$, ..., P_1S_{21}, P_1S_{2321}, $P_1S_{232}P_1$, ..., of the respective division boundaries within a wide range of depth and varying distances 100 m to 300 km from the point of explosion. However, in these the quality of the results was relatively low. Another attempt in this field was made by the Geophysics Institute Ac.Sc. in the summer of 1954. In this paper the main results are analysed of the experimental field tests in 1951 and 1954 on the use of composite refracted waves, primarily of the types $P_{12}S_1$, $P_{123}S_{21}$,

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Study of the interchange refracted waves (composite refractions) in seismic prospecting. (Cont.)

$P_{1232}S_1$ etc. which propagate along the refracting boundary as longitudinal waves. Furthermore, the composite waves of the types P_1S_{21}, P_1S_{2321}, $P_1S_{232}P_1$ etc. which travel along a major part of their path as transverse waves are considered and an evaluation is made of the anticipated intensity of the combined waves. Certain features of the observation technique are elucidated and the problem is considered of distinguishing these waves and determining the boundaries at which a change of the types of wave (interchange boundary) takes place. In para.1 the fundamental assumptions are formulated on which the setting-up of the experiments was based; the horizontal as well as the vertical components of the movement of the soil were recorded by an electrodynamic seismograph with a natural frequency of 8 to 9 c.p.s. The refracted waves were recorded at large distances from the point of explosion and the metering apparatus was designed for 6-30 c.p.s. of a type similar to that used for deep sounding. In para. 2 the experimental results are described, these are recorded on numerous reproduced seismograms and plotted in graphs.

Study of the interchange refracted waves (composite refractions) in seismic prospecting. (Cont.)

In para.3 the conditions are elucidated which are favourable from the point of view of recording the composite waves, whilst para.4 deals with the criteria for distinguishing composite waves. It is concluded that one of the fundamental trends towards extending the possibilities of seismic prospecting consists in developing methods based on simultaneous utilisation of longitudinal, composite and transverse refracted and reflected waves. For the purpose of developing such combined methods it is necessary in the first instance to solve two problems: to establish whether composite and transverse waves have an adequate intensity under real conditions and to find ways of improving the conditions of separation and tracing of these waves which are recorded with a background of noise. During the work described in the paper intensive composite waves of the type PPS and PPPPS were recorded which correspond to exchange boundaries within a wide range of depth (100-2000 m) and greatly varying distances from the point of explosion. It was found that in real media the exchange (composite) waves forming at the boundaries dividing the layers with highly differing speeds are usually characterized by an almost

Study of the interchange refracted waves (composite refractions) in seismic prospecting. (Cont.)

equal intensity to that of purely longitudinal waves and for some interchange boundaries the amplitude is even higher than for purely longitudinal waves. For recording waves which propagate as transverse ones at the last part of their trajectory horizontal seismographs were used. It was found that for improving the conditions of separation and tracing of composite waves in real multi-layer media grouping of horizontal seismographs is advisable and thereby clear recordings can be obtained; it was thus possible to trace stable composite refracted waves along considerable sections of the profile. Certain criteria for identifying composite waves were considered and verified on the basis of experimental material; it was found that determination of the type of wave in the last part of the trajectory, when approaching the observation surface and also along the refracting boundary can be carried out reliably and it is also possible to determine the interchange boundaries themselves. It is considered advisable to pay attention to combining purely longitudinal and composite (interchange) waves of the type PPS and PPPPS. Simultaneous utilisation of longitudinal and composite waves of this class is apparently the most promising way

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Study of the interchange refracted waves (composite refractions) in seismic prospecting. (Cont.)

of extending the potentialities of the seismic method. There are 13 figures, 3 tables and 19 references, 17 of which are Slavic.

SUBMITTED: June 18, 1956.

ASSOCIATION: Ac.Sc. U.S.S.R. Institute of Physics of the Earth. (Akademiya Nauk SSSR Institut Fizicki Zemli).

AVAILABLE: Library of Congress

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Vasil'yev, Yu. I.

49-58-3-3/19

AUTHORS: Vasil'yev, Yu.I., Kovalev, O.I. and Parkhomenko, I.S.

TITLE: Investigation of the Crystalline Foundation by the Method of Refracted Waves Under Conditions of Incomplete Screening. I. (Issledovaniye kristallicheskogo fundamenta metodom prelomlennykh voln v usloviyakh nepolnogo ekranirovaniya. I)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1958, No.3, pp. 317 - 329 (USSR).

ABSTRACT: Of all the existing geophysical methods of prospecting, including the seismic method of refracted waves, the most reliable and accurate results are obtained in investigating a crystalline foundation by means of the method of refracted waves. In a number of regions, particularly in the eastern part of the Russian platform, prospecting of the foundation by means of refracted waves encounters serious difficulties, particularly due to the presence in the covering medium of thick layers of carbonate rocks in which the speeds of the elastic waves are equal or almost equal to those characterising the crystalline formations. Therefore, conditions are created which are near to those of screening of longitudinal, refracted primary waves in the respective surfaces of the crystalline formations. The Geophysics Institute of the Ac.Sc. USSR (Geofizicheskiy institut AN SSSR) carried out special tests for elucidating the possibility

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Investigation of the Crystalline Foundation by the Method of Refracted Waves Under Conditions of Incomplete Screening. I.

of exploration of the foundation by means of the method of correlation of refracted waves under the given seismological conditions. The work included evolving a low-frequency modification of the method of correlation of refracted waves. The work was carried out under the direction of G.A. Gamburtsev between 1951 and 1955 with the participation of the authors of this paper and a number of other people of the Geophysics Institute of the Ac.Sc. USSR. The results of these investigations are described in this paper. The experiments were based on conclusions derived from earlier work, according to which optimum conditions for recording longitudinal, refracted waves corresponding to the surface of crystalline rocks, under conditions approaching screening, can be created by utilising sufficiently large wavelengths, i.e. by using apparatus which ensures the possibility of recording of frequencies of oscillation of the soil which are lower than those usually applied in seismic prospecting. The apparatus used is described in para. 1. It is designed to record frequencies of the range 10 - 35 c.p.s.

Investigation of the Crystalline Foundation by the Method of Refracted Waves under Conditions of Incomplete Screening. I.

The circuit of the low-frequency amplifier in Fig.2 and the frequency characteristics in Fig. 3 are shown. Para. 2 deals with the technique used in the investigations. The experimental results are dealt with in para. 3, giving a number of seismograms and hodographs. The carried out investigations show that an application of low-frequency apparatus permits recording longitudinal, refracted waves corresponding to the surface of the crystalline foundation in cases in which the latter is located under a thick layer of carbonate formations in which the speed of elastic waves is almost the same as in the crystalline formations. Earlier attempts to use, for the same purpose, medium-frequency apparatus did not prove successful. Considerable differences were detected in the dynamic characteristics of waves corresponding to the refracted layers in the carbonate formation and in the surface of the crystalline formations (differences in the features of the recording, the frequency and the degree of attenuation with distance). A low-frequency modification of the correlation method of refracted waves was developed, which can be used not only for investigating crystalline foundations, but also

Investigation of the Crystalline Foundation by the Method of Refracted Waves under Conditions of Incomplete Screening. I.

for studying thick layers of sedimentary rocks, particularly in the case of strong absorption of seismic energy or if screening layers are present. The authors consider it advisable to carry out tests also for recording refracted waves by means of low-frequency apparatus.
There are 14 figures and 10 references, all of which are Russian.

ASSOCIATION: Institute of Physics of the Earth Ac.Sc. USSR. (AN SSSR institut fiziki Zemli)

SUBMITTED: February 13, 1957

AVAILABLE: Library of Congress

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AUTHORS: Vasil'yev, Yu. I. Kovalev, O. I., Parkhomenko, I. S.

TITLE: On Investigating the Crystalline Foundation by Means of the Method of Refracted Waves Under Conditions of Incomplete Screening. Part II (Ob issledovanii kristallicheskogo fundamenta metodom prelomlennykh voln v usloviyakh nepolnogo ekranirovaniya. II)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1958, Nr 5, pp 569-581 (USSR)

ABSTRACT: In Part I of this paper (same journal, Nr 3, 1958) an attempt is described of applying a low frequency modification of the method of refracted waves for exploring the crystalline foundation in cases where the foundation is incompletely screened, and the results are given which were obtained in experimental work in the Volga-Ural region. In this paper a more detailed evaluation is made of the obtained experimental method for the purpose of detecting characteristic features of the observed data and for justifying this method of exploration. Certain dynamic and kinematic features are considered which characterise the main waves under conditions of small speed differentiation of the medium in presence of incomplete screening. Quantitative evaluation is given of the effect of screening. Furthermore, the [illegible] inter-

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pretation of the obtained information and the exploration potentialities of the method are considered. Para.1 deals with the attenuation and the stability of the main waves corresponding to the surface of the foundation, (t_{II}), and the refracting layers in a carbonate massif (t_I) considering the obtained experimental results and the causes of differing attenuation of the waves, as well as the magnitude of the differing attenuation of the waves for recording the t_{II} waves. Para.2 deals with the screening of the crystalline foundation, considering the kinematic conditions, as well as the dynamic conditions of screening. Para.3 deals with certain features of refracted waves corresponding to the surface of the foundation under conditions of small speed differentiation of the medium. Para.4 deals in detail with problems of qualitative and quantitative interpretation. In Para.5, relating to the exploration potentialities of the method, the authors deal with the possibility

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On Investigating the Crystalline Foundation by Means of the Method of Refracted Waves Under Conditions of Incomplete Screening.Part II.

in principle of exploring the foundation under conditions of incomplete screening by the described method, considering also the accuracy and the main trends in perfecting the method. . It is possible with adequate probability to distinguish structural elements of the foundation of at least 100-200 m with incidence angles of at least 1°-2°. The errors relating to the relief of the foundation are at present determined to a considerable extent by lack of information on the layer speeds in the lower regions of the massif and may reach 20 to 25% of the real fluctuations at the surface of the foundation. As an example of the comparison of seismic and geological data, a schematic structural chart is reproduced in Fig.6, p.579, which shows the foundation as plotted from seismic data and also information gained from bore holes; on the Northern part of the territory a satisfactory agreement was found to exist between the seismic and the geological data. One of the wells in the South Western part of the territory sunk after gaining knowledge from seismic data confirmed the presence of a rise in the level of the foundation whereby the difference between the seismic data and the data

 obtained by drilling amounts to about 10-15% of the depth of

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location of the foundation. It is pointed out that the developed method which is based on recording of only the longitudinal refracted low frequency waves can be considerably improved by combining observation of the longitudinal waves with observations of the "exchange" longitudinal-transverse refracted waves corresponding to the same surface and also by combining with the refracted and reflected waves corresponding to considerably deeper boundaries. Some experience in recording such waves and using the results for exploring the foundation in the Volga-Ural region is already available. There are 6 figures and 17 Soviet references.

ASSOCIATION:Akademiya nauk SSSR, Institut Fiziki Zemli(Academy of Sciences USSR, Institute of Physics of the Earth)

SUBMITTED: February 13, 1957.

1. Geophysical surveying--USSR

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PHASE I BOOK EXPLOITATION SOV/3560

Akademiya nauk SSSR. Institut fiziki zemli

Seysmicheskaya razvedka (Seismic Prospecting) Moscow, Izd-vo AN SSSR, 1959. 374 p. (Series: Its: Trudy, No. 6 /173/) Errata slip inserted. 1,500 copies printed.

Ed.: I.S. Berzon, Doctor of Physical and Mathematical Sciences; Ed. of Publishing House: L.I. Ratnikova; Tech. Ed.: V.V. Volkova.

PURPOSE: The publication is intended for geologists and geophysicists, particularly for those interested in the study of seismic waves and their use in geological prospecting.

COVERAGE: This is a collection of 17 articles published by the Academy of Sciences USSR as transactions of the Institute of Physics of the Earth. The first four articles present mainly an analysis of amplitudinal properties of waves. The second group of four articles deals with problems of frequency analysis of seismic waves. The remaining articles cover a wide field of problems in seismology such as methods of interpretation of dynamic properties of waves, observation of reflected latitudinal waves, design of high-frequency seismic instruments, etc. References are given at the end of each article.

AVAILABLE: Library of Congress

Vasil'yev, Yu.I.

12

SOV/49-59-1-5/23

AUTHORS: Berzon, I.S., Vasil'yev, Yu. I., Starodubrovskaya, S.P.

TITLE: On Refracted Waves in Water-Saturated Sand. I. (O prelomlennykh volnakh, sootvetstvuyushchikh vodonosnym peskam. I.)

PERIODICAL: Izvestiya Akademii Nauk, SSSR, Seriya Geofizicheskaya, 1959, Nr 1, pp 32-48 + 4 plates (USSR)

ABSTRACT: The kinematic and dynamic characteristics of the refracted waves in water-saturated sand were investigated in the Institute of Earth Physics, Ac.Sc., U.S.S.R. The correlation method was applied in a region where, under 5 to 50 m of clay loam, was a layer of water-saturated fine sand (P_g^3 Pt) of 7 to 30 m thick. Below, there was a layer of clay (20 to 60 m thick) placed on a crystal metamorphic base. The apparatus employed were: high frequency receiver VCh-22 (Ref 26) and a medium one of "Ilay" type. The method of absorption was based on the separate longitudinal and transverse profiles. The wave t_Π corresponding to that of sand was registered at

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On Refracted Waves in Water-Saturated Sand. I.

the distances of every 30 to 60 m along 800 m from the detonation point. For the first 350 m t_{Π} was registered as the first wave (Fig.1a,b). At greater distances ($\Delta > 350$ m) it was registered as a secondary wave (Fig.1, and Fig.2). Generally, the wave t_{Π} was always distinguished as a separate group of oscillations with two to three periods (Fig.2). Its frequency varied from 120 to 200 h (Fig.3), while the frequencies of the waves in the clay layer (t_{Γ}) and the crystal base (t_k) were 70 and 50-70 h respectively. The general character of the wave t_{Π} is shown in Figs 4 and 5. The hodographs (Fig.6) show transverse profiles parallel to each other and almost straight. The boundary velocity V_{Γ} and the apparent velocity V^{*} were determined for the longitudinal and transverse profiles. Their values varied from 1500 to 1800 m/sec. The results of this determination are shown in Fig.7 where the following notations are used: 1 and 2 - values of V_{Γ} and V^{*} respectively, as determined from the longitudinal hodographs; 3 - V_{Γ} from transverse hodographs; 4 - isolines of error $|\delta V/V|$. The

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On Refracted Waves in Water-Saturated Sand. I.

distribution of V_Γ is shown in Fig.8. The various values of V_Γ, together with the damping coefficient α of the wave t_Γ, were plotted along the actual profiles (Fig.9). Figs. 10-13 show graphs of the amplitude obtained for both the longitudinal and transverse profiles, together with the appropriate values of damping coefficient α_2 or α_2^*. It can be seen that the latter value varies from 0.002-0.004 to 0.040 m^{-1} for one type of wave t_Γ. The decrement of damping ϑ_2 was calculated from Eq.(1), where λ_2 - mean wavelength. The value of ϑ_2 was found to vary from 0.03 to 0.6. The variation in the damping coefficient was due to several causes. It was possible to establish a relationship between this coefficient and the frequency (Fig.14) as Eq.(3). In Fig.15 the relation is shown between the coefficient α_2 and the velocity V_Γ for one of the profiles. This relationship is also evident in Fig.9. The analysis shows

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that the coefficient of damping can also be defined as Eq.(2), where $\alpha_{2\,ИСТ}$ - true damping coefficient, k - coefficient relative to the energy lost in the neighbouring strata. In general, the relationship (4) can be defined, where V_1 and V_3 - velocities in the top and the bottom neighbouring strata. It is evident then that α_2 is not related to the frequency alone. Neither the values of h, $V_1/V_Г$ nor $V_3/V_Г$ affect it. Therefore, it appears that the main factor affecting the total value of α_2 is the coefficient $\alpha_{2\,ИСТ}$ which depends entirely on the condition of a refracting medium. This can be seen in Figs. 10 and 11 where the line a-a represents the cross section of the profile.
There are 15 figures and 32 references, 11 of which are Soviet, 21 English.

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On Refracted Waves in Water-Saturated Sand. I.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli
(Ac. Sc., USSR, Institute of Earth Physics)

SUBMITTED: May 14, 1957

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SOV/49-59-2-1/25

AUTHORS: Berzon, I. S., Vasil'yev, Yu. I., Starodubrovskaya, S. P.

TITLE: On Refracted Waves in Water Saturated Sand. II (O prelomlennykh volnakh, sootvetstvuyushchikh vodonosnym peskam. II)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya geofizicheskaya, 1959, Nr 2, pp 177-182 (USSR)

ABSTRACT: There are two methods of determining the wave velocity: when sand lies on the surface and no pressure is considered, or when the sand layer is at a depth Z and the pressure of its weight is encountered. In both cases a 3-component velocity should be considered, i.e. composed of velocities in sand, pore water and pore air. In the case where no account of pressure is taken the 3-component velocity V_{s0} can be calculated from Eq (1) where m_s and ρ_s are the mean compression and mean density respectively, calculated from Eqs (2) and (3), where f_i - volume part of every component ($f_1 + f_2 + f_3 = 100\%$). The value of m_i can be expressed in the values of ρ_i and V_i according to the formula (4). Therefore, the resultant velocity can be given as Eq (5), where $a = f_2 + f_3$ - volume of pores filled with liquid and gas (i.e.

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total porosity of the medium). Fig 1 illustrates the relationship of $V_{s0}^{(3)}$ and the volume f_2 (water pores) in the case when a = 20 to 50% . The curves were determined for the following data: V_1 = 5000 m/sec, V_2 = 1500 m/sec, V_3 = 330 m/sec; ρ_1 = 2.78/cm^3 , ρ_2 = 1.0 g/cm^3 , ρ_3 = 129 x 10^{-5} g/cm^3 . It can be seen from the graphs that when f_3 is negligible (f_3 = a - f_2 = 0.1 to 0.2%) , the velocity in the sand remains the same as in the case when all pores are filled with air. The velocity in the sand and the depth z can be calculated from Eq (6) (Refs 3 and 4), where E and σ - Young modulus and the Poisson coefficient for solids respectively, $\rho_1 \rho_2$ - density of solid and liquid respectively, $f_1 f_2$ - their volumes. According to Ref 2, the formula for 2-component velocity $V_{s0}^{(2)}$ in the case when z = 0 is calculated from Eq (7). In order to adjust this

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On Refracted Waves in Water Saturated Sand

equation to the 3-component medium, the value of ρ_0 should be substituted by ρ_2 and ρ_3. In the result, Eq (8) is obtained, which is substituted into Eq (6) in order to obtain the resultant velocity $V_{sz}^{(3)}$ (Eq 9). Fig.2 shows the relation of $V_{sz}^{(3)}$ (Curve 1 - at z = 50 m) and $V_{s0}^{(3)}$ (Curve 2) to the volume of pores filled with water (total porosity a = 47.6%). It is seen that the velocity does not change much with the variations of f_2. The relation of the velocity in the 2-component medium to the porosity can be seen in Fig.3, where the ratios $V_{s0}^{(2)}/V_2$ (V_2 - velocity in water) and α/α_{max} (α - coefficient of absorption) are plotted against the porosity f_2. As it is seen, when the porosity $f_2 < 30\%$, the velocity in the 2-component medium can differ from that in water by as much as 20%. Therefore, it is impossible to determine the porosity of the 2-component medium from the variations of velocity. The coefficient of absorption in the 2-component medium can be calculated from the formula (10)

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(Refs 8 and 9), where η - viscosity of liquid, r - radius of sand grain, F - frequency in h . The relationship of the coefficient α and porosity f_2 can be calculated from the expression (11). It can be seen from Fig 3 that the coefficient of absorption is more sensitive to the variations of porosity in comparison to that of velocity. Also, it is affected by the properties of sand (e.g. when the radius of the sand grain in Eq (11) increases by 2, the coefficient increases by 4). The variations in determining the velocity in sand by various methods (Refs 2-5, 8, 9) were due mainly to the different approach in calculation of the porosity and mechanical properties of sand. The seismic method proposed

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On Refracted Waves in Water Saturated Sand

in this work will assist in better determination of the extent of the sand layer under the Earth's surface, a fact which is of interest to soil mechanics engineers. There are 3 figures and 9 references; 3 of the references are Soviet and 6 are English.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli (Academy of Sciences USSR, Institute of Physics of the Earth)

SUBMITTED: May 14, 1957.

Card 5/5

VASIL'YEV, Yu.I.

Some conclusions made in analyzing reflection and refraction coefficients for elastic waves. Trudy Inst.fiz.zem. no.6: 52-80 '59. (MIRA 13:5)
(Elastic waves)

SOV/49-59-9-9/25

AUTHOR: Vasil'yev, Yu. I

TITLE: A Comparison Between the Coefficients of Reflection and Refraction of Elastic Waves at the Boundary Between two Hard and two Liquid Media

PERIODICAL: Izvestiya Akademii nauk, SSSR, Seriya geofizicheskaya, 1959, Nr 9, pp 1368-1371 (USSR)

ABSTRACT: The approximate value of the refraction coefficients A_{dl}/A_{el} at the boundary between two hard media can be determined from the simple formulae applied to liquids. This method can always be used for $a_1/a_2 > 1$ and in the case of $a_1/a_2 < 1$ any value of a_1/a_2 can be taken if the angle of incidence is smaller than its limiting value. This is illustrated in Figs 1 and 2 where the coefficients of reflection A_{rl}/A_{el} and coefficients of refraction A_{dl}/A_{el} for the hard (a) and liquid (б) media are shown respectively (Figs 3 and 4). The calculation of the approximate value of (a) can be based on the simple formula (б) for small angles of incidence. The relative error in this case will be the same for different values of the relationship of velocities a_1/a_2 of first and second media. In the case of thin layers, the application

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SOV/49-...

A Comparison Between the Coefficients ... ...action of Elastic Waves at the Boundary betwe... ...quid Media

of the formula (...) can take place if ... In the coefficients of reflection (a) and (б) ... In some particular ..., the magnitude ... the interference wave passing through a ... can determined by the first longitudinal refracted wave. This can take place in pulsating vibrations and in greater values of d/λ (d - thickness of layer, λ - wave length). In this case the results obtained for (a) and (б) are almost identical. However, this method is not very accurate for the angle of incidence greater than ... There are 4 figures and 5 references, 3 of which are Soviet, 1 English and 1 German.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli (AS USSR, Institute of Physics of the Earth)

SUBMITTED: April 9, 1958

Card 2/2

MOLOTOVA, L.V.; VASIL'YEV, Yu.I.

Magnitude of the velocity ratio of longitudinal and transverse waves in rocks. Report No.1. Izv.AN SSSR.Ser.geofiz. no.7:930-945 Jl '60. (MIRA 13:7)

1. Akademiya nauk SSSR, Institut fiziki Zemli.
(Seismic prospecting)

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S/049/60/000/008/001/015
E201/E191

AUTHORS: Molotova, L.V., and Vasil'yev, Yu.I.

TITLE: The Ratio of the Longitudinal and Transverse Wave Velocities in Rocks. II.

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1960, No. 8, pp. 1097-1116

TEXT: In Part I of this work (Ref.1) the authors reviewed methods of measuring the ratio v_p/v_s in rocks (v_p is the velocity of longitudinal waves, v_s is the velocity of transverse waves). The present paper gives a comprehensive review of published experimental values of v_p/v_s obtained by various workers using various methods. The frequencies at which the v_p/v_s ratio was obtained varied from a few c/s to tens of Mc/s. Consequently the authors considered first how the values of v_p/v_s in heterogeneous media are affected by the test frequency. It was found that in two-component heterogeneous media (Figs 1-4) the ratio v_p/v_s varies nonmonotonically with the frequency of harmonic vibrations. This ratio oscillates about a value $v_{p\infty}/v_{s\infty}$ which represents

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The Ratio of the Longitudinal and Transverse Wave Velocities in Rocks. II.

the case of infinite frequency. The differences between the v_p/v_s values at low frequencies and at high frequencies are small in the majority of cases; the same is true of the v_p/v_s maxima or minima at intermediate frequencies. Consequently the authors assumed that, in the first approximation, the ratio v_p/v_s is independent of the test frequency. Values of v_p (col.2), the depth at which measurements were carried out, H (col.3), v_p/v_s (col.4), Poisson's ratio σ (col.5), the locality of measurement (col.6), the method of measurement (col.7) and the cited literature (col.8) are listed in Table 1 for 176 rock materials. The values of v_p, v_p/v_s, σ, for several metals, glass, wood, plastics, etc. are listed in Table 2. The ratio v_p/v_s of rocks is plotted as a function of v_p, v_s and H in Figs 5, 6 and 7 respectively. The results quoted in tables and figures show that v_p/v_s in crystalline and metamorphic rocks lay between 1.7 and 1.9. The ratio v_p/v_s in sedimentary rocks varied within much wider

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The Ratio of the Longitudinal and Transverse Wave Velocities in Rocks. II.

limits: 1.5-14.0. There was a definite relationship between the limits of the v_p/v_s values of sedimentary rocks and v_p, v_s and H for the same rocks (Figs 5-7). In dry weathered rocks with small v_p the values of v_p/v_s were small: 1.5-1.8. The range of values of v_p/v_s was also small in sedimentary rocks with the longitudinal wave velocity greater than 3000 m/sec. Acknowledgements are made to the authors' colleagues for their advice and to I.V. Alekseyev who carried out the calculations.
There are 7 figures, 2 tables and 74 references: 33 Soviet, 29 English, 5 German, 3 Japanese, 1 Italian and 3 translations.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki zemli
(Physics of the Earth Institute, AS USSR)

SUBMITTED: November 9, 1959

Card 3/3

POD"YAPOL'SKIY, G.S.; VASIL'YEV, Yu.I.

Raleigh type waves on restricted surfaces. Izv.AN SSSR.Ser.geofiz. no.9:1289-1308 S '60. (MIRA 13:9)

1. Akademiya nauk SSSR, Institut fiziki Zemli.
(Seismic waves)

VASIL'YEV, Yu.I.; IVANOVA, T.G.

Filtering properties of thin layers. Izv. AN SSSR. Ser. geofiz. no.10:1475-1487 O '61. (MIRA 14:9)

1. AN SSSR, Institut fiziki Zemli.
(Seismic waves)

S/049/61/000/011/002/003
D239/D303

AUTHORS: Vasil'yev, Yu. I., and Shcherbo, M.N.

TITLE: On characteristic oscillations in the system horizontal seismograph - ground

PERIODICAL: Akademiya nauk. Izvestiya. Seriya geofizicheskaya, no. 11, 1961, 1614-1623

TEXT: The study was carried out in 1958-59 in view of the paucity of such observations compared with those on a system vertical seismograph - ground. It was made by the impulse method according to I. P. Pasechink (Ref. 6: Izv. AN SSSR ser. geofiz. no. 1, 1952) using four types of seismograph, but mainly the СЭДС-52 (SEDS-52). All the seismographs were well-damped and used in conjunction with an amplifier flat from 4 - 200 c/s, with which various filters were used, whose characteristics are graphed. The authors are certain that the records are of oscillations characteristic of the whole system and not just stray resonances e.g. in the beams. Experiments were made in shallow pits up to 55 cm deep in the overburden, at

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On characteristic oscillations ...

which depth there was a limestone basement. In some experiments the baseplate was covered with earth or sand. The most striking result was that the characteristic frequency of oscillations was always higher than that of the horizontal, the former lying in the range 75-125 c/s and the latter in the range 35-60 c/s, the ratio of the two for any given set-up occasionally reaching a value of 2.5 : 1. The decrement of the vertical was also 2 - 2.5 times that of the horizontal. The best conditions are clearly to bury the instrument in a shallow pit and cover the base with sand or earth. A theory is derived for the case of an elliptical baseplate resting on a semi-infinite elastic medium which can account for the results and shows how the ratio of vertical to horizontal characteristic frequencies depends on Poisson's ratio. Ya. Kh. Shaykhyanov took part in the experiments and L. I. Bokanyenko suggested one of them. L. M. Flitman is acknowledged as a colleague. There are 7 figures and 13 references: 11 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: A. Wolf, The equation of motion of a geophone on the surface of an elastic earth. Geophys., 9, no. 1, 1944; F. Gossmann, Elastic waves through a

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On characteristic oscillations ... S/049/61/000/011/002/005
D239/D303

packing of spheres. Geophys., 16, no. 4, 1951.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki zemli (Academy of Sciences of the USSR, Institute of Physics of the Earth)

SUBMITTED: April 28, 1961

Card 3/3

VASIL'YEV, Yu.I.

Two brief statements on constants at damping of elastic waves in rocks. Izv. AN SSSR. Ser.geofiz. no.5:595-602 My '62. (MIRA 15:8)

1. Institut fiziki Zemli AN SSSR.

(Elastic waves)

VASIL'YEV, Yu.I.; GUREVICH, G.I.

Ratio between the decrements of attenuation and the velocity of the propagation of longitudinal and transverse waves. Izv. AN SSSR, Ser.geofiz. no.12:1695-1716 '62. (MIRA 16:2)

1. Institut fiziki Zemli AN SSSR.
(Seismic waves)

L 25545-66 EWT(1)/EWA(h) GW

ACC NR: AP6005837 SOURCE CODE: UR/0387/65/000/010/0063/0071

AUTHOR: Vasil'yev, Yu. I.; Shcherbo, M. N.

ORG: Institute of Physics of the Earth, Academy of Sciences, SSSR (Institut fiziki Zemli Akademii nauk SSSR)

TITLE: Plastic shear waves in the soil

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 10, 1965, 63-71

TOPIC TAGS: seismic wave, ~~wave propagation~~, ~~wave number~~ seismology, wave mechanics, seismography, seismologic instrument

ABSTRACT: The authors describe experiments conducted in the summer of 1963 in the Rostovskaya oblast for generating plastic shear waves in the soil. Dynamic loading was accomplished by the blows of a cylindrical weight against the surface of the earth. A cylinder 30 cm in diameter and weighing 150 kg was used. This load was dropped from a height ranging from a few centimeters to 7.5 meters. The maximum velocity preceding impact was 0.5-12 m/sec. The equipment used for recording the plastic waves consisted of ASED and NS-4 low-frequency seismic detectors in combination with low-frequency amplifiers and a standard seismic prospecting oscillograph. The observations were taken in direct proximity to the point of application of the force. Plastic shear waves propagating in the soil are similar to elastic transverse waves in a region which shows a nonlinear stress-deformation relationship and predominantly

UDC: 534.2:550.834

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L 25545-66
ACC NR: AP6005837

inelastic plastic deformations of the medium (close to the source). Seismograms are given for various systems of instrument location in the soil. These seismograms are analyzed to determine some of the kinematic parameters of the waves close to the source and the nature of wave polarization. The authors are sincerely grateful to N. V. Zvolinskiy for discussing various procedural problems. Orig. art. has: 8 figures.

SUB CODE: 08/ SUBM DATE: 09Feb65/ ORIG REF: 011/ OTH REF: 001

Card 2/2 ULR

L 22547-66 EWT(m) RM

ACC NR: AP6005083 SOURCE CODE: UR/0404/65/000/005/0039/0045

AUTHOR: Sinitsin, G. S.; Vasil'yev, Yu. I.

23
B

ORG: none

TITLE: Experimental cultivation of lobate nightshade in Southeastern Kazakhstan

SOURCE: AN KazSSR. Izvestiya. Seriya biologicheskikh nauk, no. 5, 1965, 39-45

TOPIC TAGS: cortisone, hormone, plant growth

ABSTRACT: The feasibility of growing lobate nightshade (*Solanum laciniatum Ait.*) in Kazakhstan was investigated, beginning in 1960. The medicinal plant--a valuable source of solasodine alkaloid, and hence, cortisone and other steroid hormone preparations--has been introduced in the Soviet Union in recent times. Leaf and stalk samples were processed, dried and analyzed for solasodine content between July and October 1963 at various stages of growth. Maximum solasodine content was found in the leaves of the plant in September. Solasodine content in various parts of the plant in samples taken at various periods of the growing season is presented in tabular form. The nightshade was grown on an Alma-Ata Kolkhoz and the solasodine was extracted at the Chimkent Chemico-pharmaceutical Plant. It was found that the dried samples contained the necessary 8% solasodine content required for industrial processing. Techniques of planting, cultivating, and drying lobate nightshade and also cost and

UDC: 633.88

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L 22547-66

ACC NR: AP6005083

O

profit factors in its cultivation and processing are discussed. Orig. art. has: 1 table, 1 photograph.

SUB CODE: 06,02/ SUBM DATE: 00/ ORIG REF: 003/ OTH REF: 000

Card 2/2 BK

L 61414-65 EWT(d)/EWP(h)/EWP(l)

ACCESSION NR: AP5019110 UR/0286/65/000/012/0135/0135

20
B

AUTHORS: Teererin, A. A.; Vasil'yev, Yu. I.

TITLE: A belt conveyor. Class 81, No. 172233

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 12, 1965, 135

TOPIC TAGS: belt conveyor, transport process, bearing, ball bearing

ABSTRACT: This Author Certificate presents a belt conveyor with supporting rollers. To prevent the bending of the part of the conveyor belt under the hopper outlet, free balls are placed between the rollers (see Fig. 1 on the Enclosure). These balls bear directly on the rollers. Orig. art. has: 1 diagram.

ASSOCIATION: none

SUBMITTED: 13Dec63 ENCL: 01 SUB CODE: IE

NO REF SOV: 000 OTHER: 000

Card 1/2

ACCESSION NR: AP5019110

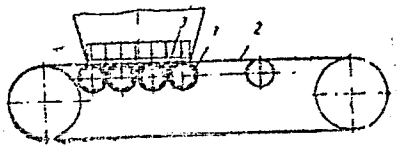

Fig. 1. 1- supporting rollers; 2- conveyor belt; 3- balls

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ACCESSION NR: AP4038144 S/0049/64/000/005/0636/0653

AUTHORS: Ivanova, T. G.; Vasil'yev, Yu. I.

TITLE: The selection of optimal characteristics of apparatus when recording head waves from the crystalline basement

SOURCE: AN SSSR. Izv. Seriya geofizicheskaya, no. 5, 1964, 636-653

TOPIC TAGS: seismic prospecting, seismic wave, frequency spectrum, microseism, low frequency oscillation, seismograph NS 3

ABSTRACT: The optimal frequency for obtaining useful signals from any reflecting surface depends on many factors and is generally determined experimentally. The authors have made special studies to find the optimal range of frequencies when recording head waves from the crystalline basement in the Moscow region. Investigations were made with low-frequency seismic-prospecting equipment developed at the Institut fiziki Zemli AN SSSR (Institute of Physics of the Earth AN SSSR), the low-frequency NS-3 seismograph, which permits recording of frequencies down to 3 or 4 cycles. On the frequency spectrum, the maximum in the useful part was found at 6-7 cycles. The middle of the spectrum shows intense low-frequency oscillations caused

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ACCESSION NR: AP4038144

by surface waves from man-made sources, particularly within a radius of 10-15 km. The level of low-frequency noise increases noticeably when the frequency of recorded waves declines. Above 15 cycles, the noise level is due chiefly to wind, the intensity increasing somewhat with higher frequencies. It was found that the optimal frequency characteristic of the instrument for the indicated area, bringing about the greatest sensitivity, is in the band pass from 6-8 to 10-12 cycles, with sharp left and right cutoffs near 20 decibels. Microseisms appearing on the record are inconstant with time. The maximum sensitivity of the instrument, for any particular moment of observation rather than for average sensitivity, may be obtained from a magnetic record. Orig. art. has: 12 figures and 7 formulas.

ASSOCIATION: Akademiya nauk SSSR Institut fiziki Zemli (Academy of Sciences SSSR, Institute of Physics of the Earth)

SUBMITTED: 20Jun63 DATE ACQ: 12Jun64 ENCL: 00

SUB CODE: ES NO REF SOV: 008 OTHER: 004

Card 2/2

KAZAK, V.N.; VASIL'YEV, Yu.I.

Studying the stability of uncovered roofs on a three-dimensional model. Podzem.gaz.ugl. no.3:14-18 '59. (MIRA 12:12)

1. Vsesoyuznyy nauchno issledovatel'skiy i proyektnyy institut podzemnoy gazifikatsii ugley i Vsesoyuznyy nauchno-issledovatel'skiy marksheyderskiy institut.
(Coal gasification, Underground)
(Geological modeling)

VASIL'YEV, Yu.

"Sovetskoe foto" prize awarded to Hindu photographer. Sov.foto 22 no.6:25 Je '62. (MIRA 15:6)
(Photography--Competitions)

VASIL'YEV, Yu.

Quality of factory plans. Mias.ind. SSSR 33 no.3:16-17 '62.
(MIRA 15:7)

1. Leningradskiy myasokombinat.
(Factories—Design and construction)

VASIL'YEV, Yu.; KREMER, Ye.

Meeting of a working group of the Council of the Mutual Economic Aid. Khim.volok no.4:77-78 '62. (MIRA 15:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut steklyanogo volokna.
(Textile fibers, Synthetic—Congresses)

VASIL'YEV, Yu.K., kand. tekhn. nauk; RYBAN'CHENKO, Yu.I.; LARCHENKO, V.I.

Stepping-type reducing motors. Avtom. i prib. no.3:49-52 Jl-S '64. (MIRA 18:3)

25(5) SOV/118-59-2-18/26

AUTHOR: Vasil'yev, Yu.K., Engineer

TITLE: The Transportation of Parts Inside Plants (Vnutrizavodskaya transportirovka detaley)

PERIODICAL: Mekhanizatsiya i avtomatizatsiya proizvodstva, 1959, Nr 2, pp 50-51 (USSR)

ABSTRACT: At the Voronezhskiy zavod kuznechno-pressovogo oborudovaniya im. M.I. Kalinina (the Voronezh Plant of Forging and Pressing Equipment imeni M.I. Kalinin) 14 mechanical electric driven carriages with a carrying capacity of 15 and 20 tons have been designed and manufactured. The carriage is put into action by operating a press button switch. By using these carriages, the internal transportation of charging and casting materials, small casting boxes, cores etc. is fully mechanized. These carriages have also been used as a base for welding machines equipped with an automatic welding head of the ABS type (designed by the Institut elektrosvarki im.akad. Patona - Institute of Electric Welding

Card 1/2

The Transportation of Parts Inside Plants

imeni Academician Paton) for horizontal, vertical and circular welding operations. The welding mechanism consists of the electric carriage, moving along a rail track with 16 various speeds, appropriate to the speed of the welding head; columns with the tool holder of the 257 radial drilling machine, a stiff girder, and the welding head. The carriage carries, besides the welding equipment, a generator, a transformer and the control panel. There are 2 diagrams, and 1 photograph.